UPSC NDA Syllabus 2024

The UPSC NDA Syllabus 2024 for the written exam is divided into two papers: mathematics and general ability tests. Candidates should be familiar with the NDA 2024 syllabus to comprehend the topics and sub-topics that may be covered in the exam. They should begin their preparation after reviewing the NDA 1 syllabus 2024, as this will help them connect their approach with the requirements.

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UPSC NDA Syllabus for Mathematics

Subject	Topics
UPSC NDA Syllabus for Algebra	Concept of set, operations on sets, Venn diagrams.
	De Morgan laws, Cartesian product, relation, equivalence relation.
	Representation of real numbers on a line.
	Complex numbers—basic properties, modulus, argument, cube roots of unity.
	Binary system of numbers.
	Conversion of a number in a decimal system to a binary system and vice-versa.
	Arithmetic, Geometric and Harmonic progressions.
	Quadratic equations with real coefficients.
	Solution of linear inequations of two variables by graphs.

	Permutation and Combination.
	Binomial theorem and its applications.
	Logarithms and their applications.
UPSC NDA Syllabus for Matrices and Determinants	Types of matrices, operations on matrices.
	Determinant of a matrix, basic properties of determinants.
	Adjoint and inverse of a square matrix.
	Applications-Solution of a system of linear equations in two or three unknowns by Cramer's rule and by Matrix Method.
UPSC NDA Syllabus for Trigonometry	Angles and their measures in degrees and in radians.
	Trigonometric ratios.
	Trigonometric identities Sum and difference formulae.
	Multiple and Sub-multiple angles.
	Inverse trigonometric functions.
	Applications-Height and distance, properties of triangles.

UPSC NDA Syllabus for Analytical Geometry of Two and Three Dimensions	Rectangular Cartesian Coordinate system.
	Distance formula.
	Equation of a line in various forms.
	The angle between two lines.
	Distance of a point from a line.
	Equation of a circle in standard and in general form.
	Standard forms of parabola, ellipse, and hyperbola.
	Eccentricity and axis of a conic.
	Point in a three-dimensional space, the distance between two points.
	Direction Cosines and direction ratios.
	Equation of a plane and a line in various forms.
	The angle between two lines and the angle between two planes.
	Equation of a sphere.
UPSC NDA Syllabus for Differential Calculus	Concept of a real-valued function–domain, range, and graph of a function.

	Composite functions, one-to-one, onto, and inverse functions.
	The notion of limit, Standard limits—examples.
	Continuity of functions—examples, algebraic operations on continuous functions.
	Derivative of function at a point, geometrical and physical interpretation of a derivative—applications.
	Derivatives of sum, product, and quotient of functions, derivative of a function with respect to another function, derivative of a composite function.
	Second-order derivatives.
	Increasing and decreasing functions.
	Application of derivatives in problems of maxima and minima.
UPSC NDA Syllabus for Integral Calculus and Differential Equations	Integration as inverse of differentiation, integration by substitution and by parts, standard integrals involving algebraic expressions, trigonometric, exponential and hyperbolic functions. Evaluation of definite integrals—determination of areas of plane regions bounded by curves—applications.
	Definition of order and degree of a differential equation, formation of a differential equation by examples.
	A general and particular solution of differential equations, solution of the first order and first-degree differential equations of various types—examples.

	Application in problems of growth and decay.
UPSC NDA Syllabus for Vector Algebra	Vectors in two and three dimensions, magnitude and direction of a vector.
	Unit and null vectors, addition of vectors, scalar multiplication of a vector, scalar product or dot product of two vectors.
	Vector product or cross product of two vectors.
	Application work done by a force and moment of a force and in geometrical problems.
UPSC NDA Syllabus for Statistics and Probability	Statistics
	Classification of data, Frequency distribution, cumulative frequency distribution—examples.
	Graphical representation—Histogram, Pie Chart, frequency polygon— examples.
	Measures of Central tendency—Mean, median and mode.
	Variance and standard deviation—determination and comparison.
	Correlation and regression.
	Random experiment, outcomes and associated sample space, events, mutually exclusive and exhaustive events.

	Impossible and certain events.
	Union and Intersection of events.
	Complementary, elementary and composite events.
	Definition of probability—classical and statistical—examples.
	Elementary theorems on probability—simple problems.
	Conditional probability, Bayes' theorem—simple problems.
	Random variable as function on a sample space.
	Binomial distribution, examples of random experiments giving rise to Binomial distribution.

UPSC NDA Syllabus for General Ability Test

Subject	Topics
UPSC NDA Syllabus for English	Spotting Errors
	Comprehension
	Selecting Words
	Synonyms

	Antonyms	
	Sentence Improvements	
	Ordering of Words in a Sentence, etc.	
UPSC NDA Syllabus for Physics	Physical Properties and States of Matter, Mass, Weight, Volume, Density and Specific Gravity, the Principle of Archimedes, and the Pressure Barometer.	
	Motion of objects, Velocity and Acceleration, Newton's Laws of Motion, Force and Momentum, Parallelogram of Forces, Stability and Equilibrium of bodies, Gravitation, elementary ideas of work, Power and Energy.	
	Effects of Heat, Measurement of Temperature and Heat, change of State and Latent Heat, Modes of Transference of Heat.	
	Sound waves and their properties, Simple musical instruments. Rectilinear propagation of Light, Reflection and refraction. Spherical mirrors and Lenses, Human Eye.	
	Natural and Artificial Magnets, Properties of a Magnet, Earth as a Magnet.	
	Static and Current Electricity, conductors and Nonconductors, Ohm's Law, Simple Electrical Circuits, Heating, Lighting and Magnetic effects of Current, Measurement of Electrical Power, Primary and Secondary Cells, Use of X-Rays.	
	General Principles in the working of the following: Simple Pendulum, Simple Pulleys, Siphon, Levers, Balloon, Pumps, Hydrometer, Pressure Cooker, Thermos Flask, Gramophone, Telegraphs, Telephone, Periscope, Telescope, Microscope, Mariner's Compass; Lightning Conductors, Safety Fuses.	

UPSC NDA Syllabus for Chemistry	Physical and Chemical changes. Elements, Mixtures and Compounds, Symbols, Formulae and simple Chemical Equations, Law of Chemical Combination (excluding problems). Properties of Air and Water
	Preparation and Properties of Hydrogen, Oxygen, Nitrogen and carbon dioxide, Oxidation and Reduction. Acids, bases and salts. Carbon—different forms.
	Fertilizers—Natural and Artificial. Material used in the preparation of substances like Soap, Glass, Ink, Paper, Cement, Paints, Safety Matches and Gun-Powder.
	Elementary ideas about the structure of Atom, Atomic Equivalent and Molecular Weights, Valency
UPSC NDA Syllabus for General Science	The difference between living and nonliving things. The basis of Life—cells, Protoplasms, and Tissues. Growth and Reproduction in Plants and Animals.
	Elementary knowledge of the Human Body and its vital organs. Common Epidemics, their causes and prevention.
	Food is a source of Energy for man. Its constituents include a balanced Diet. The Solar System includes meteors, comets, and Eclipses.
	Eminent Scientists have achieved many achievements.
UPSC NDA Syllabus for History, Freedom Movement etc.	A broad survey of Indian History, with emphasis on Culture and Civilisation.
	Freedom Movement in India. Elementary study of Indian Constitution and Administration. Elementary knowledge of Five Year Plans of India. Panchayati Raj, Co-operatives and Community Development. Bhoodan, Sarvodaya, National Integration and Welfare State, Basic Teachings of Mahatma Gandhi.

	Forces shaping the modern world; Renaissance, Exploration and Discovery; War of American Independence. French Revolution, Industrial Revolution and Russian Revolution. Impact of Science and Technology on Society. Concept of one World, United Nations, Panchsheel, Democracy, Socialism and Communism. Role of India in the present world.
UPSC NDA Syllabus for Geography	The Earth, its shape and size. Latitudes and Longitudes, Concept of time. International Date Line. Movements of Earth and their effects.
	Origin of Earth. Rocks and their classification; Weathering—Mechanical and Chemical, Earthquakes and Volcanoes. Ocean Currents and Tides Atmosphere and its composition; Temperature and Atmospheric Pressure, Planetary Winds, Cyclones and Anticyclones;
	Humidity; Condensation and Precipitation; Types of Climate, Major Natural regions of the World. Regional Geography of India—Climate, Natural vegetation. Mineral and Power resources; location and distribution of agricultural and Industrial activities.
	Important Sea ports and main sea, land and air routes of India. Main items of Imports and Exports of India.
UPSC NDA Syllabus for Current Events	Knowledge of Important events that have happened in India in recent years.
	Current important world events.
	Prominent personalities—both Indian and International including those connected with cultural activities and sports.